

REMARKS

Claims 1-39 are pending. No amendment has been made.

Allowable Subject Matter

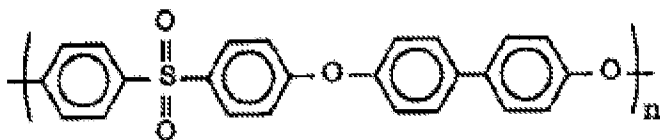
Applicants thank Examiner Truong for allowing claims 1-8, 16, and 38.

Claim Rejections -- 35 U.S.C. §102(b)

Applicants respectfully traverse the rejections of claims 9, 13, 17, and 39 as being anticipated by WO 99/10165 under 35 U.S.C. §102(b).

Claim 9 recites a polyarylene ether-based compound wherein a sulfonic group is introduced to a polyarylene ether-based polymer that includes 52 wt % or higher of a dioxybiphenylene unit (-O-Ph-Ph-O-) in the polymer structure.

The Office Action states that WO 99/10165 discloses “a polyarylene ether based compound in that a sulfonic group is introduced to a polyarylene ether based polymer having a dioxybiphenylene unit (see Table 7, the third formula form [sic] the top).” See Office Action, page 2, lines 7-9. The third formula from the top in Table 7 of WO 99/10165, Radel R polyphenylsulfone, has the following structure:



A polyarylene ether based polymer, in which the above-depicted unit (molecular weight: 400 per unit) alone is repeated, would have a dioxybiphenylene unit (-O-Ph-Ph-O-; molecular weight: 184 per unit) in an amount of 46 wt % (i.e. 184/400), not 52 wt % or higher, as recited in present claim 9.

WO 99/10165 does not disclose, explicitly or implicitly, a polyarylene ether-based compound wherein a sulfonic group is introduced to a polyarylene ether-based polymer that includes 52 wt % or higher of a dioxybiphenylene unit (-O-Ph-Ph-O-) in the polymer structure, as recited in instant claim 9. An aromatic polyether-based polymer containing 52 wt % or higher

of a dioxybiphenylene unit, in which a sulfonic group is introduced to obtain sufficient ion conductivity, exhibits small swelling and excellent dimensional stability when under high temperature and high humidity, compared with an aromatic polyether-based polymer having less than 52 wt % of a dioxybiphenylene unit where a sulfonic group is introduced under the same conditions. See specification, page 13, line 21 to page 14, line 2. As shown in Examples 4-6 of the present application, polyarylene ether-based polymer films containing 52 wt % or higher of a dioxybiphenylene unit maintained their form after being placed in a saturated vapor atmosphere at 130 °C for four hours (page 52, line 3 to page 53, line 3; page 53, line 16 to page 54, line 15). By contrast, a polyarylene ether-based polymer containing 46 wt % of a dioxybiphenylene unit was fused and lost its form after being placed in a saturated vapor atmosphere at 130 °C for four hours (Comparative Example 4, page 53, lines 5-15). Applicants note that the third formula from the top in Table 7 of WO 99/10165, which the Office Action cites as anticipating the claimed invention, is identical to the polymer of the instant Comparative Example 4 minus the sulfonic group. As discussed above, the polymer of WO 99/10165 contains 46 wt % of a dioxybiphenylene unit, not 52 wt % or higher as recited in present claim 9.

For at least the forgoing reasons, the claimed invention is not anticipated by WO 99/10165. Withdrawal of the rejections of claims 9, 13, 17, and 39 is respectfully requested.

Objection of Claims 10-12

Claims 10-12 were objected to as being dependent upon a rejected base claim. As discussed above, claim 9 is not anticipated by WO 99/10165. Applicants respectfully request the withdrawal of the objections to claims 10-12.

CONCLUSION

The Examiner is encouraged to contact the undersigned regarding any questions concerning this amendment. In the event that the filing of this paper is deemed not timely, applicants petition for an appropriate extension of time. The Commissioner is authorized to debit Deposit Account No. 11-0600 the petition fee and any other fees that may be required in relation to this paper.

Respectfully submitted,

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